

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently amended) An amplifier A-amplifier of a dynamically balanced pneumatic relay type, the amplifier comprising:

a balance plug adapted to generate a balancing force proportional to an input signal pressure, the balancing force operable to oppose an end load force acting on the amplifier;

a supply plug positioned proximate to and on top of the balance plug;

a bead chain connecting adapted to couple the balance plug and to the supply plug; and

a vent plug positioned on coupled to the top of the supply plug,

wherein the relay integrated with the balance plug, the supply plug, and the vent plug avoids are integrated and adapted to avoid a flow deadband in which a signal pressure generated by the amplifier changes without corresponding output flow, thereby providing both a reliable steady state relay performance and a consistent dynamic response, and wherein the integrated balance plug, supply plug, and vent plug provide a steady state output flow proportional to the input signal pressure.

2. (Original) The amplifier of claim 1 further comprising a baffle positioned on top of the vent plug for counteracting a back pressure created during a venting process.

3. (Currently Amended) A current-to-pneumatic converter used in an electro pneumatic positioner, the converter having a flexure-nozzle arrangement to produce a signal pressure proportional to a given electrical current, the converter comprising:

a coil adapted to supply a variable electro-magnetic effect within the converter

proportional to current supplied to the coil;

a flat strip made of magnetic material located in proximity to a nozzle, a portion of the flat strip integrated into a molded spring support, the flat strip having a thickness, wherein the thickness of the flat strip is locally reduced in an area not integrated into the molded spring support; and

a flow regulator having a flat spring securing a plug in a seat within the regulator, the flow regulator proximate to the flat strip of magnetic material,

wherein the regulator maintains a near constant fluid flow feeding the nozzle, and wherein the electro-magnetic effect from the coil is operable to act on the flat strip of magnetic material to move the plug to allow a pneumatic pressure proportional to the supply current.

4. (Currently Amended) A current-to-pneumatic converter of an electropneumatic positioner, the converter comprising:

a cantilevered flexure integrally secured to a molded spring support; support;

a first bias spring positioned on a first side of the flexure; and

a second bias spring positioned on a second side of the flexure,

wherein the flexure, the molded spring support, and the bias springs are centered around a nozzle of the converter, wherein a thickness of the flexure is locally reduced in an area not integrated into the molded spring support, thereby providing a predetermined temperature and vibration resistance for the converter.

5. (New) A method for generating an output flow proportional to a signal pressure, the method comprising:

receiving an input signal pressure into a rely-type amplifier, the amplifier comprising:

a balance plug adapted to generate a balancing force proportional to the input signal pressure;

a supply plug coupled to the balance plug by a bead chain, the supply plug adapted to allow a portion of the input signal pressure to enter the amplifier; and

a vent plug proximate to the supply plug, the vent plug adapted to vent high output pressures;
generating an output pressure proportional to the input signal pressure.

6. (New) The method of claim 5, further comprising the step of coupling a baffle to the vent plug, the baffle adapted to counteract back pressure generated by the output flow.